**Claims**

1. A welding apparatus with two electrode carriers which can be moved relative to one another by a servomotor and can be mounted with electrodes, characterized in that it has at least one linear guide (1), on which both electrode carriers (6, 12) are guided, in that the electrode carriers (6, 12) and the servomotor (9) form an assembly mounted in a floating position on the linear guide (1), and in that the assembly is held in a base position, from which the electrode carriers (6, 12) can be transferred to the welding position, by means for compensating for its weight.

2. The welding apparatus as claimed in claim 1, characterized in that it is equipped with a brake (20), by which the assembly formed by the electrode carriers (6, 12) and the servomotor (9) can be locked on the linear guide (1).

3. The welding apparatus as claimed in claim 1 or 2, characterized in that three carriages (2, 3, 4) are mounted on the linear guide (1).

4. The welding apparatus as claimed in claims 2 and 3, characterized in that the carriage (3) connected to the servomotor (9) can be locked by the brake (20).

5. The welding apparatus as claimed in one of claims 2 to 4, characterized in that a brake rail (18), which can be locked by a piston (19) of the brake (20), is connected to the carriage (3) carrying the servomotor (9).

6. The welding apparatus as claimed in one of claims 1 to 5, characterized in that the servomotor (9) is arranged between the electrode carriers (6, 12).

7. The welding apparatus as claimed in claim 6, characterized in that the servomotor (6, 12) can be used to drive two spindles (8, 14) which are provided with opposing screw threads and engage with nuts assigned to the electrode carriers (6, 12).

8. The welding apparatus as claimed in claim 7, characterized in that the spindles (8, 14) are connected, via clutches (10, 15), to opposite shaft stubs (11, 16) of the shaft of the servomotor (9).

9. The welding apparatus as claimed in claim 8, characterized in that the clutches (10, 15) are designed as slipping clutches.

10. The welding apparatus as claimed in one of claims 7 to 9, characterized in that the spindles (8, 14), which can be driven by the servomotor (9), engage with nuts at those ends of the electrode carriers (8, 12) which are remote from the electrodes (7, 13).

11. The welding apparatus as claimed in one of claims 1 to 10, characterized in that the means for compensating for its weight are formed by at least one spring (21).

12. The welding apparatus as claimed in one of claims 1 to 10, characterized in that the means for compensating for its weight are formed by a pneumatic cylinder.

13. The welding apparatus as claimed in one of claims 1 to 12, characterized in that the linear guide (1) is provided with end stops (22, 23).